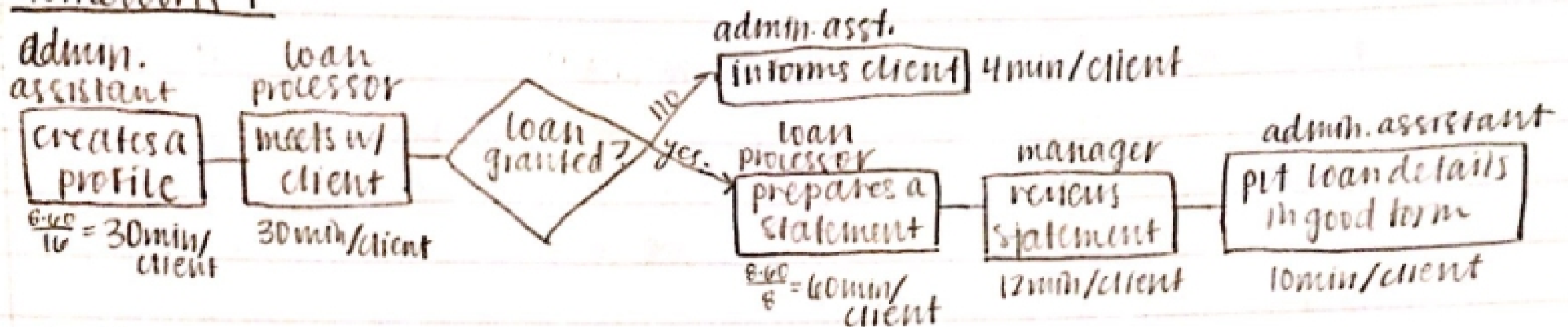


Homework 1



Cycle times:

1) admin. assistant

a) loan granted = 40 mins (75%)

b) loan denied = 34 mins (25%)

cycle time = $40(.75) + 34(.25) = 38.5 \text{ min}$

2) loan processor

a) loan granted = 90 mins (75%)

b) loan denied = 30 mins (25%)

cycle time = $90(.75) + 30(.25) = 75 \text{ mins}$

3) Manager

a) loan granted = 12 mins (75%)

b) loan denied = 0 mins (25%)

cycle time = $12(.75) + 0(.25) = 9 \text{ mins}$

Throughput Rates

person throughput rate

admin	$\frac{20 \text{ days} \cdot 8 \text{ hrs} \cdot 60 \text{ min}}{38.5 \text{ min}} = 249 \text{ clients/month}$
loan process.	$\frac{20 \cdot 8 \cdot 60}{75} = 128 \text{ clients/month} \leftarrow \text{bottleneck + system capacity}$
manager	$\frac{20 \cdot 8 \cdot 60}{9} = 1066 \text{ clients/month}$

① Hire another loan processor

person	throughput	throughput after hiring loan processor	new bottleneck/system capacity
admin	249 clients/month	249 clients/month	Avg rev/loan = $500(.75) + 0(.25) = \$375$ Value of processor = $(249 - 128) 375 = \$45,375$
loan processor	128 clients/month	256 clients/month	
manager	1066 clients/month	1066 clients/month	

② Hire another administrative assistant

person	throughput	throughput after hiring admin.	new bottleneck and carrying capacity
admin	249 clients/month	498 clients/month	$\text{Avg rev/loan} = 500(.75) + 0(.25) = 375$ $\text{Value of admin} = (256 - 249) 375 = 2,625$
loan processor	256 clients/month	256 clients/month	
manager	1066 clients/month	1066 clients/month	

③ Hire another loan processor

person	throughput	throughput after hiring loan processor	new bottleneck/carrying capacity
admin	498 clients/month	498 clients/month	$\text{Avg rev/loan} = 500(.75) + 0(.25) = 375$ $\text{Value of processor} = (498 - 256) 375 = 90,750$
loan processor	256 clients/month	512 clients/month	
manager	1066 clients/month	1066 clients/month	

$256 + 128 =$

④ Hire LP

⑤ Hire another administrative assistant

person	throughput	throughput after hiring admin.	new bottleneck/carrying capacity
admin	498 clients/month	996 clients/month	$\text{Avg rev/loan} = 500(.75) + 0(.25) = 375$ $\text{Value of admin} = (512 - 498) 375 = 5,250$
loan processor	512 clients/month	512 clients/month	
manager	1066 clients/month	1066 clients/month	

500
↑
max # of loans

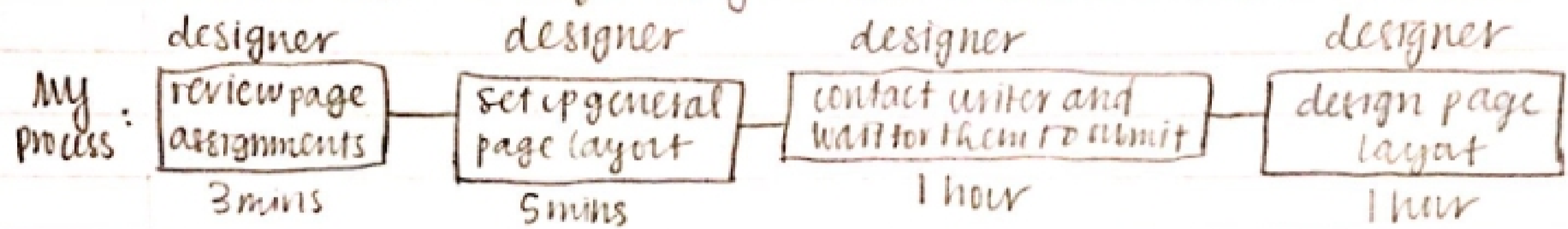
Overall summary:

position hired	value added by extra resource
① loan processor	\$45,375 ✓
② admin	\$2,625 ✓
③ loan processor	\$90,750
④ admin	\$5,250

split: 2 hires
48006
42750
750

Total additional hires: 2 loan processors, 2 admin

2. I work as a designer for the Scholastic magazine on camps. Once a month we have a big production weekend during which all the editors put together the publication. I like to get work done before Monday evening so that the process will be faster, but a lot of times I am unable to layout pages because stories have not been submitted yet:



Process throughput time = $60 + 60 + 5 + 3 = 128$ mins

One way to improve this process would be through 5S. It would be beneficial to create a system that allows writers to submit their files and organize them into correct folders based on which designer has been assigned to their page.

- a) sort - sort stories in different folders based on the corresponding designer
- b) straighten - Arrange folders so they can easily be selected for use
- c) sweep - delete stories once they are no longer needed and page has already been designed
- d) standardize - tell writers that they must submit their stories on time and in the right place, keep everything orderly
- e) sustain - make sure that deadlines are being met and that writers are disciplined to submit stories

This method could also be considered jidoka since it involves building quality into the system